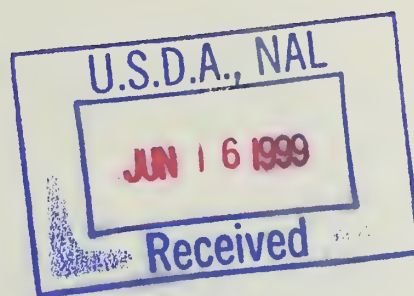


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UNITED STATES STANDARDS

for grades of

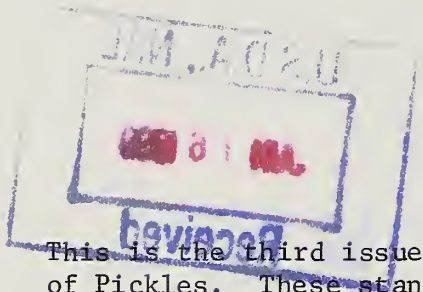
PICKLES

Third Issue

EFFECTIVE SEPTEMBER 1, 1966

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH

These standards supersede the standards which have been in effect since
April 30, 1954



This is the third issue of the United States Standards for Grades of Pickles. These standards supplant the second issue of the United States Standards for Grades of Cucumber Pickles. These standards are issued by the Department after careful consideration of all data and views submitted.

These standards were published in the Federal Register of July 29, 1966 (31 F.R. 10235), to become effective September 1, 1966.

These standards are included in the Code of Federal Regulations, Title 7 -- Agriculture, Part 52.

Issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality, the grade standards are for the voluntary use of producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

These standards will also serve as a basis for the inspection and grading of this commodity by the Federal inspection service, which is also provided under the Agricultural Marketing Act of 1946. This service, available for inspection and grading of other processed products as well, is offered to interested parties, upon application, on a fee-for-service basis.

These standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards obtained from:

Chief, Processed Products Standardization
and Inspection Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
Washington, D.C. 20250

UNITED STATES STANDARDS FOR GRADES OF PICKLES¹

Effective September 1, 1966

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¹ Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable state laws and regulations.

Sec.

- 52.1701 Units of weights and measures.

SCORE SHEET

- 52.1702 Score sheet for pickles.

AUTHORITY: The provisions of this subpart issued under secs. 52.1681 to 52.1702 issued under sec. 205, 60 Stat. 1090, as amended; 7 U.S.C. 1624.

PRODUCT DESCRIPTION AND STYLES

§ 52.1681 Product description.

"Pickles" means the product prepared entirely or predominantly from cucumbers (*Cucumis sativus* L). Clean, sound ingredients are used which may or may not have been previously subjected to fermentation and curing in a salt brine (solution of sodium chloride NaCl). The prepared pickles are packed in a vinegar solution, to which may be added salt and other vegetable(s), nutritive sweetener(s), seasoning(s), flavoring(s), spice(s) and other ingredients permissible under the Federal Food, Drug, and Cosmetic Act. The product is packed in suitable containers and heat treated, or otherwise processed to assure preservation.

§ 52.1682 Styles of pickles.

(a) "Whole" means the cucumber ingredient is whole.

(b) "Sliced crosswise" or "crosscut" applies to cucumbers cut into slices transversely to the longitudinal axis. The cut surfaces may have flat-parallel or corrugated-parallel (waffle cut) surfaces.

(c) "Sliced lengthwise" means cut longitudinally into halves, quarters, or other triangular shapes, or otherwise into units with parallel surfaces with or without ends removed.

(d) "Cut" means cut or broken into units which may or may not be uniform in size or shape.

(e) "Relish" means finely cut or finely chopped pickles.

TYPES OF PACK

§ 52.1683 Cured type.

Pickles of cured type are cured by natural fermentation in a salt brine solution (NaCl) which may contain dill herb or other flavorings. The pickle ingredient may be partially desalted and is then processed or preserved in a vinegar solution with other ingredients of various compositions to give the characteristics of the particular type of pickle. The distinguishing characteristics of the various types of cured pickles are as follows:

(a) *Dill pickles (natural or genuine)*. Dill pickles (natural or genuine) are cured in salt brine with dill herb.

(b) *Dill pickles (processed)*. Dill pickles (processed) are cured pickles packed in a vinegar solution with dill flavoring(s).

(c) *Sour pickles*. Sour pickles are cured pickles packed in a vinegar solution.

(d) *Sweet pickles and mild sweet pickles*. Sweet pickles and mild sweet pickles are cured pickles packed in a vinegar solution with suitable nutritive sweetening ingredient(s).

(e) *Sour mixed pickles*. Sour mixed pickles are cured pickles packed in a vinegar solution. The pickles may be of any style or combination styles other than relish. Sour mixed pickles contain onions and cauliflower and other ingredients as outlined in Table I.

(f) *Sweet mixed pickles and mild sweet mixed pickles*. Sweet mixed pickles and mild sweet mixed pickles are cured pickles packed in a vinegar solution with suitable nutritive sweetening ingredient(s). The pickles may be of any style or combination of styles other than relish. Such pickles contain onions and cauliflower and other ingredients as outlined in Table I.

(g) *Sour mustard pickles or sour chow-chow pickles*. Sour mustard pickles or sour chow-chow pickles are cured pickles of the same styles and ingredients as sour mixed pickles, except

that instead of liquid solution they are packed in a prepared mustard sauce of proper consistency. The pickle ingredients are as outlined in Table I.

(h) *Sweet mustard pickles or sweet chow-chow pickles*. Sweet mustard pickles or sweet chow-chow pickles are cured pickles of the same styles and ingredients as sweet mixed pickles, except that instead of liquid solution they are packed in a sweetened prepared mustard sauce of proper consistency. The pickle ingredients are as outlined in Table I.

(i) *Sour pickle relish*. Sour pickle relish consists of cured, finely cut or finely chopped cucumber pickles packed in a vinegar solution. Sour pickle relish may contain other finely cut or chopped vegetable ingredients as outlined in Table I.

(j) *Sweet pickle relish and mild sweet pickle relish*. Sweet pickle relish and mild sweet pickle relish consists of cured, finely cut or finely chopped cucumbers packed in a vinegar solution with suitable nutritive sweetening ingredient(s). Sweet pickle relish may contain other finely cut or chopped vegetable ingredients as outlined in Table I.

§ 52.1684 Fresh-pack type.

Pickles of fresh-pack type are prepared from uncured unfermented cucumbers and are packed in a vinegar solution with other ingredients of various compositions to give the characteristics of the particular type of pickle. They are sufficiently processed by heat to assure preservation of the product in hermetically-sealed containers. The distinguishing characteristics of the various types of fresh-pack pickles are as follows:

(a) *Fresh-pack dill pickles*. Fresh-pack dill pickles are packed in a vinegar solution with dill flavoring(s).

(b) *Fresh-pack sweetened dill pickles*. Fresh-pack sweetened dill pickles are packed in a vinegar solution with nutritive sweetening ingredient(s), and dill flavoring(s).

(c) *Fresh-pack sweetened dill relish*. Fresh-pack sweetened dill relish consists of finely cut or finely chopped cucumbers packed in a vinegar solution with suitable nutritive sweetening ingredient(s), and dill flavoring(s). The relish may

contain other finely cut or finely chopped vegetable ingredients as outlined in Table I.

(d) *Fresh-pack sweet pickles and fresh-pack mild sweet pickles.* Fresh-pack sweet pickles and fresh-pack mild sweet pickles are packed in a vinegar solution with nutritive sweetening ingredient(s).

(e) *Fresh-pack sweet relish and fresh-pack mild sweet relish.* Fresh-pack sweet relish and fresh-pack mild sweet relish consists of finely cut or finely chopped cucumbers packed in a vinegar solution with suitable nutritive sweetening ingredient(s). The relish may contain other finely cut or finely chopped vegetable ingredients as outlined in Table I.

(f) *Fresh-pack dietetic pickles.* Fresh-pack dietetic pickles may be prepared in any style with or without the addition of sweetening ingredient(s), salt (NaCl), and other suitable ingredient(s) as declared and permitted under the Federal Food, Drug, and Cosmetic Act for foods purporting to be for special dietary uses.

TABLE I—PROPORTIONS OF PICKLE INGREDIENTS IN CERTAIN TYPES AND STYLES

Pickle ingredients and style	Cured type and fresh-pack type	
	Sour mixed; sweet mixed; sour mustard or sour chow chow; sweet mustard or sweet chow chow	Sour relish; sweet relish; sweetened dill relish; hamburger relish; mustard relish
Percent by weight of drained weight of product		
Cucumbers—any style other than relish.	60% to 80%—	
Cucumbers—finely cut.	-----	60% to 100%.
Cauliflower—pieces.	10% to 30%—	
Cauliflower—finely cut.	-----	10% to 30% (optional).
Onions—whole (maximum diameter of 1¼ inch).	5% to 12%—	
Onions—sliced or cut.	5% to 12%—	
Onions—finely cut.	-----	5% to 12% (optional).
Green tomatoes—whole or pieces.	10% maximum.	
Green tomatoes—finely cut.	-----	10% maximum (optional).
Red, green, or yellow peppers or pimientos—cut, finely cut, or pieces.	Optional—	Optional.
Cabbage.	Optional—	Optional.
Olives.	Optional—	Optional.
Tomato paste.	-----	Required (hamburger relish).
Mustard or prepared mustard.	Required in chow chow and mustard pickles.	Required in mustard relish—optional in hamburger relish.

GRADES

§ 52.1685 Grades of pickles.

(a) "U.S. Grade A" (or "U.S. Fancy") is the quality of pickles in which the cucumbers possess similar varietal characteristics; and that for the applicable type: (1) possess a good flavor; (2) possess a good color; (3) are reasonably uniform or practically uniform in size; (4) are practically free from defects; (5) possess a good texture; and (6) score not less than 90 points as outlined in this subpart.

(b) "U.S. Grade B" (or "U.S. Extra Standard") is the quality of pickles in

which the cucumbers possess similar varietal characteristics; and that for the applicable type: (1) possess a reasonably good flavor; (2) possess a reasonably good color; (3) may or may not be at least reasonably uniform in size; (4) are reasonably free from defects; (5) possess a reasonably good texture; and (6) score not less than 80 points as outlined in this subpart.

(c) "Substandard" is the quality of pickles that fail to meet the requirements of U.S. Grade B.

FILL OF CONTAINER

§ 52.1686 Recommended fill of container.

It is recommended that each container be filled as full as practicable with product without impairment of quality. The pickle ingredient shall be covered or practically covered with the packing medium, and the product shall occupy not less than 90 percent of the total capacity of the container.

§ 52.1687 Quantity of pickle ingredient.

(a) The recommended minimum quantity of pickle ingredient is designated as a percentage of the declared volume of product in the container for all items except pickle relish. Minimum quantity of pickle relish is designated as a relationship of the drained weight of the pickle ingredient to the declared volume of the container (see § 52.1699). The minimum quantities of pickle ingredient recommended herein are not incorporated in the grades of the finished product, since minimum quantity, as such, is not a factor of quality for the purposes of these grades.

(1) (i) The percent volume of pickle ingredient is determined for all styles, except relish, by one of the following methods or any other method that gives equivalent results:

Method 1—Direct displacement (overflow-can method) (See § 52.1699).

Method 2—Displacement in graduated cylinder.

Method 3—Measurement of pickle liquid.

(ii) Copies of these methods and the procedure for the determination of percent weight/volume (w/v) of relish and

recommended amounts for most container sizes are available upon request from:

Processed Products Standardization and Inspection Branch, Fruit and Vegetable Division, Consumer and Marketing Service, U.S. Department of Agriculture, Washington, D.C. 20250.

TABLE II—ALL STYLES (OTHER THAN RELISH)—RECOMMENDED PICKLE INGREDIENT

<i>Type of Pack</i>	<i>Minimum Fill Percent (Volume)</i>
Cured.....	55
Fresh-Pack.....	57

TABLE III—RELISH—RECOMMENDED DRAINED WEIGHT

<i>Type of Pack</i>	<i>Minimum Percent (Weight/Volume)</i>
Cured:	
Sweet.....	92
Other than sweet.....	88
Fresh-Pack:	
Sweet.....	85
Other than sweet.....	80

§ 52.1688 Compliance with recommended minimum quantity of pickle ingredient.

Compliance with the recommended minimum quantity of pickle ingredient is determined by averaging the values obtained from all the containers in the sample which represents a specific lot. The lot is considered as meeting the recommendations if the following criteria are met:

(a) The sample average meets the recommended minimum quantity of pickle ingredient; and

(b) There is no unreasonable shortage of pickle ingredient in any container.

SIZES AND COUNTS

§ 52.1689 Sizes for whole pickles.

Sizes of whole pickles are based on the diameter and the relationship of diameter to the count per gallon. Size designations and applicable counts and diameters are outlined in Table IV in this subpart. The diameter of a whole cucumber is the shortest diameter at the greatest circumference measured at right angles to the longitudinal axis of the cucumber.

TABLE IV—SIZES OF WHOLE PICKLES

Word designation	Count per gallon	Diameters
Midget.....	270 or more.....	$\frac{3}{4}$ inch or less.
Small gherkin.....	135-269.....	Up to $1\frac{1}{16}$ inch.
Large gherkin.....	65-134.....	Up to $1\frac{1}{16}$ inches.
Small.....	40-64.....	Over $1\frac{1}{16}$ to $1\frac{3}{8}$ inches.
Medium.....	26-39.....	Over $1\frac{3}{8}$ to $1\frac{1}{2}$ inches.
Large.....	18-25.....	Over $1\frac{1}{2}$ to $1\frac{3}{4}$ inches.
Extra large.....	12-17.....	Over $1\frac{3}{4}$ to $2\frac{1}{8}$ inches.

Blend of sizes... A combination of any two adjacent designated sizes.

Mixed sizes... A combination of more than two adjacent designated sizes.

FACTORS OF QUALITY

§ 52.1690 Ascertaining the grade of a sample unit.

(a) *General.* The grade of a sample unit is ascertained by considering certain factors and analytical requirements which are not scored; the ratings for the factors of color, uniformity of size, defects, and texture which are scored; the total score; and the limiting rules which may apply.

(b) *Factors and analytical requirements not rated by score points.*

- (1) Varietal characteristics.
- (2) Acid content.
- (3) Salt content.
- (4) Brix value or Baumé value.

(5) Flavor (Palatability).

(c) Factors rated by score points.

The relative importance of each factor is expressed numerically on a scale of 100. The maximum number of points that may be given each factor is:

Factors:	Points
Color	20
Uniformity of size.....	20
Defects	30
Texture	30

Total score..... 100

(d) *Flavor*—(1) *General.* In evaluating flavor for the respective types—cured and fresh-pack—consideration is given to (i) those flavor characteristics which serve to identify the type and flavor; (ii) the effects of curing, preparation, processing and storing; (iii) compliance with the requirements for acidity, salt and sweetener; and (iv) freedom from objectionable and off flavors of any kind.

(2) “Good flavor” means a good distinctive flavor for the type. The product meets the analytical requirements of Tables V or VI as applicable.

(3) “Reasonably good flavor” means a flavor somewhat lacking in distinctive flavor of the type but is free from objectionable flavors and odors.

TABLE V—CURED TYPE
ANALYTICAL LIMITS FOR “GOOD FLAVOR” IN GRADE A

Cured type	Acetic acid in gram per 100 ml. unless indicated otherwise		Salt			Brix	Baumé				
			NaCl	Salometer							
	<i>Minimum</i> Lactic 0.6.	<i>Maximum</i>	<i>Maximum</i>	<i>Minimum</i> 10°	<i>Maximum</i> 19°	<i>Minimum</i>	<i>Minimum</i>				
Dills (natural or genuine).	} 0.6	-----	-----	10°	19°	-----	-----				
Dills (processed)		-----	-----	10°	19°	-----	-----				
Sour		-----	-----	10°	19°	-----	-----				
Sour mixed		-----	-----	-----	-----	-----	-----				
Sour relish	} 1.7	2.7	3 gms. (per 100 ml.).	-----	-----	32.64°	18.0°				
Sweets		-----									
Sweet mixed	} 1.7	2.7						-----	-----	-----	-----
Sweet relish		-----									
Mild sweet	} 1.0	-----	-----	-----	-----	20.0°	12.0°				
Mild sweet mixed		-----	-----	-----	-----	-----	-----				
Mild sweet relish		-----	-----	-----	-----	-----	-----				
Sour mustard or sour chow chow.	1.7 gms. (per 100 gms.)	2.7 gms.	3 gms. (per 100 gms.).	-----	-----	28.0°	15.5°				
Sweet mustard or sweet chow chow.	1.7 gms. (per 100 gms.)	2.7 gms.	3 gms. (per 100 gms.).	-----	-----						

TABLE VI—FRESH-PACK TYPE
ANALYTICAL LIMITS FOR “GOOD FLAVOR” IN GRADE A

Fresh-pack type	Acid (acetic) (grams per 100 ml.)		NaCl (salt) (grams per 100 ml.)		Brix	Baumé
	<i>Minimum</i>	<i>Maximum</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Minimum</i>	<i>Minimum</i>
Fresh-pack dills.....	0.5	1.1	1.75	4.25		
Fresh-pack sweetened dills.....	.5	1.1	1.75	4.25	7.2 ⁰	4.0 ⁰
Fresh-pack sweetened dill relish.....	.5	1.1	1.75	4.25	7.2 ⁰	4.0 ⁰
Fresh-pack sweet and mild sweet pickles.....	.8	1.65	1.25	2.75	18.0 ⁰	10.0 ⁰
Fresh-pack sweet and mild sweet relish.....	.8	1.65	1.25	2.75	18.0 ⁰	10.0 ⁰
Fresh-pack dietetic.....						

§ 52.1691 Ascertaining the rating for each factor.

The essential variations within each factor are so described that the value may be ascertained for each factor and expressed numerically. The numerical range for the rating of each factor is inclusive (for example, “18 to 20 points” means 18, 19, or 20 points).

§ 52.1692 Color.

(a) (A) *classification*. Pickles that possess a good color may be given a score of 18 to 20 points. “Good color” means that the overall color appearance is typical of pickles that have been properly prepared and properly preserved or processed; and has the following further meanings for the respective type:

(1) *Grade A Color—cured type*. (i) The typical skin color of the cucumber ingredient ranges from a translucent light green to dark green and is practically free from bleached areas. Not more than 10 percent, by weight, of the cucumber ingredient may vary markedly from such typical color.

(ii) In mixed pickles, chow chow pickles, and pickle relish all of the pickle ingredients possess a good, practically uniform typical color for the respective ingredient.

(iii) The pickles shall be free of ripe cucumbers or other off-color vegetable ingredients.

(2) *Grade A Color—fresh-pack type*.

(i) The typical skin color of the cucumber ingredient ranges from an opaque yellow-green to green. Not more than 15 percent, by weight, of the cucumber ingredient may vary markedly from such typical color.

(ii) In pickle relish all of the pickle ingredients possess a good, reasonably

uniform typical color for the respective ingredient.

(iii) The pickles shall be free of ripe cucumbers or other off-color vegetable ingredients.

(b) (B) *classification*. If the pickles possess a reasonably good color, a score of 16 or 17 points may be given. Pickles that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). “Reasonably good color” means that the overall color appearance is reasonably typical of pickles that have been properly prepared and properly preserved or processed; and has the following meanings for the respective type:

(1) *Grade B Color—cured type*. (i) The typical skin color of the cucumber ingredient ranges from light green to dark green and is reasonably free from bleached areas. Not more than 25 percent, by weight, of the cucumber ingredient may vary markedly from such typical color.

(ii) In mixed pickles, chow chow pickles, and pickle relish all of the pickle ingredients possess a reasonably good, reasonably uniform typical color for the respective ingredient.

(iii) The pickles shall be free from ripe cucumbers or other off-color vegetable ingredients.

(2) *Grade B Color—fresh-pack type*.

(i) The typical skin color of the cucumber ingredient ranges from yellow-green to green. Not more than 30 percent, by weight, of the cucumber ingredient may vary markedly from such typical color.

(ii) In pickle relish all of the pickle ingredients possess a good, fairly uniform typical color for the respective ingredient.

(iii) The pickles shall be free of ripe cucumbers or other off-color vegetable ingredients.

(c) (*SStd.*) *classification.* Pickles that fail to meet the requirements of paragraph (b) of this section may be given a score of 0 to 15 points and shall not be graded above substandard, regardless of the total score for the product (this is a limiting rule).

§ 52.1693 Uniformity of size.

(a) *Definitions of terms.* (1) "Diameter" of a whole pickle means the shortest diameter measured transversely to the longitudinal axis at the greatest circumference of the pickle.

(2) "Diameter" of a unit sliced crosswise is determined by measuring the shortest diameter of the largest cut surface of the unit.

(3) "Length" of a unit sliced lengthwise is the longest straight measurement at the approximate longitudinal axis.

(4) "Blend" of sizes is a combination of any two adjacent designated sizes.

(5) "Mixed" sizes is a combination of more than two adjacent designated sizes.

(b) (A) *classification.* Pickles that are practically uniform in size may be given a score of 18 to 20 points. "Practically uniform in size" means that the units within a single style may vary moderately in size but not to the extent that the overall appearance of the product is materially affected, and that further meet the criteria for variation in diameter, length, or weight for the style as stated in Table VII.

Small, odd sized units in the top of the container, which are added to insure well filled containers, shall not be deemed as detracting from the quality.

TABLE VII
LIMITS IN (A) CLASSIFICATION FOR UNIFORMITY OF SIZE

	Length variation		Diameter variation		Thickness	
	In all units (maximum)	In 90% of units (maximum)	In all units (maximum)	In 90% of units (maximum)	(Minimum)	(Maximum)
	<i>Inches</i>	<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Inch</i>
Whole styles:						
Midget size.....	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{5}{16}$	$\frac{3}{16}$	-----	-----
Gherkin size.....					-----	-----
Small size.....	1	$\frac{3}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	-----	-----
Medium size.....	$1\frac{1}{4}$	1	$\frac{7}{16}$	$\frac{5}{16}$	-----	-----
Large size.....					-----	-----
Blend of sizes.....	Full range of two adjacent sizes.		Full range of two adjacent sizes.		-----	-----
Mixed sizes.....	Range of more than two adjacent sizes.		Range of more than two adjacent sizes.		-----	-----
Sliced lengthwise:						
Halves or triangular shapes.....	$1\frac{3}{4}$	1	-----	-----	$\frac{1}{8}$	$\frac{3}{8}$
With parallel surfaces.....	$1\frac{3}{4}$	1	-----	-----	$\frac{1}{8}$	$\frac{3}{8}$
Sliced crosswise.....	Maximum diameter.....		$2\frac{1}{8}$ inches	-----	$\frac{1}{8}$	$\frac{3}{8}$
Cut pickles	Weight variations—Not more than 5 percent, by weight, of all cucumber units may be smaller than $\frac{1}{2}$ ounce each; and in the remainder, the largest unit is no more than 4 times the weight of the smallest unit.					
Relish.....	Size appearance—The pickle ingredients may vary moderately in size. The presence of oversized pieces does not affect overall appearance.					

(c) (B) *classification.* If the cucumber pickles are reasonably uniform in size, a score of 16 or 17 points may be given. "Reasonably uniform in size" means that the units may vary considerably in size and may fail to meet in some respects the criteria for variation in diameter, length, or weight as stated

in Table VII, but not to the extent that the overall appearance of the product is seriously affected.

(d) (*SStd.*) *classification.* Pickles that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 15 points and shall not be graded above U.S. Grade B, re-

ardless of the total score for the product (this is a partial limiting rule).

§ 52.1694 Defects.

(a) *General.* This factor is concerned with imperfections in the product, such as grit, attached stems, misshapen pickles, discoloration, or mechanical damage which affect its appearance or edibility.

(b) *Definitions.* (1) "Curved" pickles means whole cucumber pickles that are curved at an angle of 35° or more but not more than 60°.

(2) "Misshapen" pickles means whole cucumber pickles that are curved at more than a 60-degree angle, "nubbins", and other deformed pickles.

(3) "Grit, sand, or silt" means any particle of earthy material, whether in the liquid packing medium or imbedded in the skin or flesh of the pickle, that affects the edibility.

(4) "Blemished" means affected by discoloration, scars, scratches, skin breaks, or other similar imperfections. Pickles so affected are classified in varying degrees as:

(i) Minor blemishes—those which detract only slightly from the appearance of the unit, but which in increasing numbers affect the overall appearance of the product.

(ii) Major blemishes—those which detract, but not seriously, from the appearance and edibility of the product.

(iii) Serious blemishes—those which strongly detract from the appearance and edibility of the product.

(5) "Mechanical damage" means crushed or broken units, slices with missing centers, or similar damage which materially detracts from the appearance of the unit. Small odd-sized units in top of container are not considered mechanical damage when apparently added to insure well-filled containers.

(6) "Stem" means any attached stem longer than three-eighths inch.

(7) "Long stem" means any attached stem longer than three-fourths inch.

(8) "End cut" in sliced crosswise means a cucumber unit with only one cut surface.

(9) "Other defects" means any defects, or defective units, not specifically mentioned which affect the appearance or edibility, or both, of the product. These include, but are not necessarily limited to, abnormally colored pickle ingredients and harmless vegetable or other harmless material not associated with proper pickle preparation or packaging.

(c) (A) *Classification.* Pickles that are practically free from defects may be given a score of 27 to 30 points. "Practically free from defects" means that:

(1) There may be present no more than a trace of grit;

(2) The product meets the requirements of Grade A as indicated in Table VIII; and

(3) Other defects, individually or collectively, do not materially affect the appearance or edibility of the product.

(d) (B) *Classification.* If the pickles are reasonably free from defects, a score of 24 to 26 points may be given. Pickles that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably free from defects" means that:

(1) There may be present a small amount of grit which does not seriously affect the edibility of the product;

(2) The product meets the requirements of Grade B as indicated in Table VIII; and

(3) Other defects, individually or collectively, do not seriously affect the appearance or edibility of the product.

(e) (SStd.) *classification.* Pickles that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 23 points and shall not be graded above substandard, regardless of the total score for the product (this is a limiting rule).

(f) *Explanation of allowances.* For the purposes of Table VIII of this subpart the allowances specified for the respective type of defect and grade clas-

sification are applicable to individual containers, except that when a fractional unit results because of the application of the percentage allowance a whole unit is permitted in lieu of such

fractional unit: *Provided*, That in all containers comprising the sample the average of such defective units does not exceed the allowance.

TABLE VIII
MAXIMUM ALLOWANCES FOR DEFECTS, OR DEFECTIVE UNITS

Defects or defective units (in all styles and types unless stated otherwise)	Grade A	Grade B
Curved pickles (in whole style or whole units in other styles).	10 percent, by count, of whole units..	20 percent, by count, of whole units.
Misshapen pickles (in whole style or whole units in other styles).	5 percent, by count, of whole units..	15 percent, by count, of whole units.
Units with attached stems (longer than $\frac{3}{8}$ inch).	10 percent, by count, of all cucumber units but no more than 1 percent, by count, of all cucumber units with "long stems."	20 percent, by count, of all cucumber units but no more than 4 percent, by count, of all cucumber units with "long stems."
End cuts (in sliced crosswise style or units sliced crosswise).	5 percent, by weight, of all cucumber units.	15 percent, by weight, of all cucumber units.
Damaged by mechanical injury.....	10 percent, by count, of all pickle units including vegetable ingredients other than cucumber.	15 percent, by count, of all pickle units including vegetable ingredients other than cucumber.
In cured type:		
Minor blemish.....	Reasonably free.....	
Major and serious blemish.....	10 percent, by count, but no more than 1 percent, by count, may be serious.	20 percent, by count, but no more than 3 percent, by count, may be serious.
In fresh-pack type:		
Minor blemish.....	Fairly free.....	
Major and serious blemish.....	20 percent, by count, but no more than 5 percent, by count, may be serious.	30 percent, by count, but no more than 10 percent, by count, may be serious.

§ 52.1695 Texture.

(a) *General*. The factor of texture refers to the firmness, crispness, and the condition of the cucumber ingredient and of any other vegetable ingredient(s) which may be present.

(b) *Definitions*. (1) "Chalky white area" means a pronounced opaque, chalky white internal portion of which, in cross-section, the chalky area exceeds $\frac{1}{6}$ of the pickle area. Very pale green to translucent white internal areas are not considered "chalky white" areas.

(c) (A) *classification*. Pickles that possess a good texture may be given a score of 27 to 30 points. "Good texture" means that the cucumber and other vegetable ingredient(s) are firm and crisp, are practically free from cucumber pickle units with large objectionable seeds, detached seeds, and tough skins; and in addition has the following meanings for the respective type:

(1) *Grade A Texture—cured type*. Of the cucumber ingredient, there may be present not more than:

(i) 5 percent, by count, that are shriveled, soft, or slippery. Very slight shriveling is permitted in sweet pickles.

(ii) 5 percent, by count, of whole units with hollow centers; and

(iii) 10 percent, by count, of whole, sliced, or cut units with chalky white areas.

(2) *Grade A Texture—fresh-pack type*. Of the cucumber ingredient, there may be present not more than:

(i) 10 percent, by count, that are shriveled, soft, or flabby; and

(ii) 15 percent, by count, of whole units with hollow centers.

(d) (B) *classification*. If the pickles possess a reasonably good texture a score of 24 to 26 points may be given. Pickles that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably good texture" means that the cucumber and other vegetable ingredi-

ents are reasonably firm and crisp; are reasonably free from cucumber pickle units with large objectionable seeds, detached seeds and tough skins; and in addition has the following meanings for the respective type:

(1) *Grade B texture—cured type.* Of the cucumber ingredient, there may be present not more than:

(i) 10 percent, by count, that are markedly shriveled, soft, or slippery;

(ii) 10 percent, by count, of whole units with hollow centers; and

(iii) 20 percent, by count, of whole, sliced, or cut units with chalky white areas.

(2) *Grade B texture—fresh-pack type.* Of the cucumber ingredient, there may be present not more than:

(i) 15 percent, by count, that are markedly shriveled, soft, or flabby; and

(ii) 25 percent, by count, of whole units with hollow centers.

(e) (*SStd.*) *classification.* Pickles that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 23 points and shall not be graded above substandard, regardless of the total score for the product (this is a limiting rule).

METHODS OF ANALYSIS AND DEFINITIONS

§ 52.1696 Definitions of analytical terms.

(a) *Degrees Baumé.* The density of the packing medium in terms of degrees Baumé is determined with a Baumé hydrometer (modulus 145) corrected to 20° C. (68° F.).

(b) *Brix value.* Brix value (or "Brix") is determined with a Brix hydrometer calibrated in percent sugar, by weight, corrected to 20° C. (68° F.).

(c) *Degrees Salometer.* Degrees salometer is determined with a salt hydrometer calibrated in Salometer degrees (0° to 100°) corrected to 20° C. (68° F.). Each degree Salometer corrected to 20° C. (68° F.) is equal to 0.2643 percent salt (NaCl), by weight, in solution. Each 1 percent salt, by weight, in solution at 20° C. (68° F.) corresponds to 3.7836° Salometer.

(d) *Salt.* Salt (NaCl) is determined by titration and the results expressed in

terms of "grams per 100 milliliters" of the packing medium; except that salt in chow chow is determined and results expressed in terms of "grams per 100 grams" of product.

(e) *Acid.* Acid is determined by titration with standard sodium hydroxide solution, using phenolphthalein indicator; and the total acidity (calculated as lactic or acetic, as the case may be) is expressed in terms of "grams per 100 milliliters" of the packing medium; except that acid in chow chow is determined and results expressed in terms of "grams per 100 grams" of product.

§ 52.1697 Definition of equalization.

(a) *General.* The equalization of the soluble solids between the pickle ingredient and packing medium is brought about by natural or simulated means and the results of either is considered "after equalization" and is afforded the same significance.

(b) *Natural equalization.* A natural equalization of the finished product is brought about after a certain time has elapsed after processing and storage, as follows:

(1) *Sweetened pickles.* Sweetened pickles with nutritive sweetening ingredient(s) are considered to be equalized 15 days or more after packing.

(2) *Sour and dill pickles.* Sour and dill pickles are considered to be equalized 10 days or more after packing.

(c) *Simulated equalization.* This is a method of simulating equalization by comminuting the finished product in a mechanical blender, filtering the suspended material from the comminuted mixture and making the required test on the filtrate.

(1) *All styles and types of pickles.*

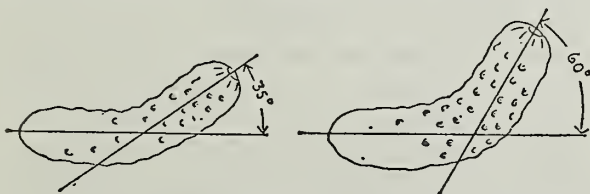
(i) On all size containers the entire sample (pickle ingredient and packing medium) is used with an equal weight of distilled water. Cut the large units of pickle ingredient into smaller sections prior to placing in a blender. Comminute the mixture for about two minutes. Strain through a U.S. Standard No. 20 sieve (0.841 mm opening) and when necessary further filter to obtain a clear sample and make desired analytical determinations on filtrate. After appropriate calculation and corrections

have been made multiply the reading by 2 to obtain the final values for Baumé, Brix, Salometer, salt (NaCl), and acidity.

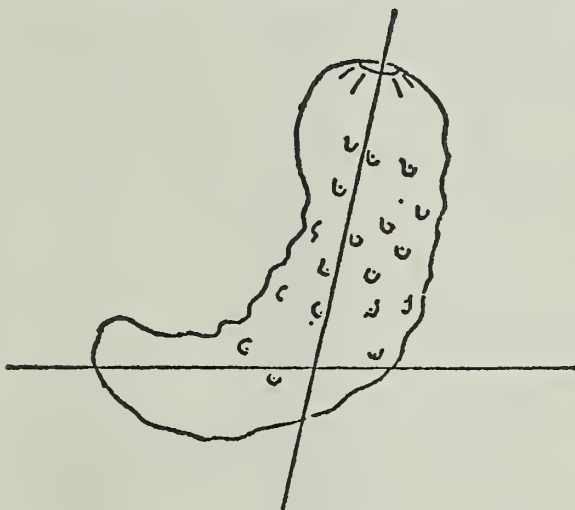
(ii) Analytical determinations for some pickles may be made from the undiluted slurry without prior addition of water during blending. Such values are direct and are not multiplied by 2 to obtain final values.

§ 52.1698 Definitions and measurement of pickles.

(a) *Curved pickle*. A curved pickle is one that is curved at an angle of 35 to 60 degrees when measured as illustrated.



(b) *Crooked pickle*. A crooked pickle is one that is curved at an angle greater than 60 degrees, similar to the following illustration:



(c) *Misshapen pickles*. Misshapen pickles include crooked, nubbins, and otherwise misshapen pickles. A nubbins pickle is one that is not cylindrical in form, is short and stubby, or is not well developed. Nubbins and otherwise misshapen pickles are similar to illustrations that follow:



§ 52.1699 Methods of determining quantity of pickle ingredient.

(a) *Direct displacement (overflow-can method)*. (1) This method may be used for all types of pickles except relish. The can is a No. 10 or one to two gallon size with an overflow spout constructed from $\frac{1}{8}$ to $\frac{3}{16}$ inch inside diameter metal tubing. The tubing is soldered to opening inside of can about 1 inch from bottom and is bent upward parallel to sides. The tube is bent over and slightly downward from the can at upper end to form a spout about $1\frac{1}{2}$ inches below top of can. The lower tip end of the spout is lower than the inside lower curve of the spout (point A). The upper tip end of the spout is higher than the inside lower curve of the spout (point A). The upper tip end of the spout is slightly shorter than the lower tip end of the spout. A brace near the top of the can holds tubing firmly in place. A woven wire basket made from screen wire with about 8 meshes to the inch with a handle is used for lowering the pickle ingredient into the overflow can.

(2) Place overflow can on level table so that overflow will discharge into sink. Fill overflow can with water at room temperature (approximately 20° C., 68° F.). Place empty basket into filled overflow can.

(3) When overflow ceases, place beaker or graduated cylinder under spout. Remove basket and place drained pickle ingredient (at room temperature) in basket and lower slowly into overflow

can. When overflow ceases, record fluid overflow. The percent volume of pickle ingredient (volume occupied) is calculated for the declared container size as follows:

$$\frac{\text{Overflow}}{\text{Declared fluid content of container}} \times 100$$

=percent volume of pickle ingredient

(4) Prior to determining the percent volume of pickle ingredient for chow pickles the drained pickle ingredient is prepared as follows: Empty the contents of the container upon a U.S. Standard No. 8 sieve of proper diameter so as to distribute the product evenly. Wash off all adhering sauce under a spray of water at a temperature of approximately 20° C. (68° F.). Incline the sieve to facilitate drainage and allow to drain for 2 minutes.

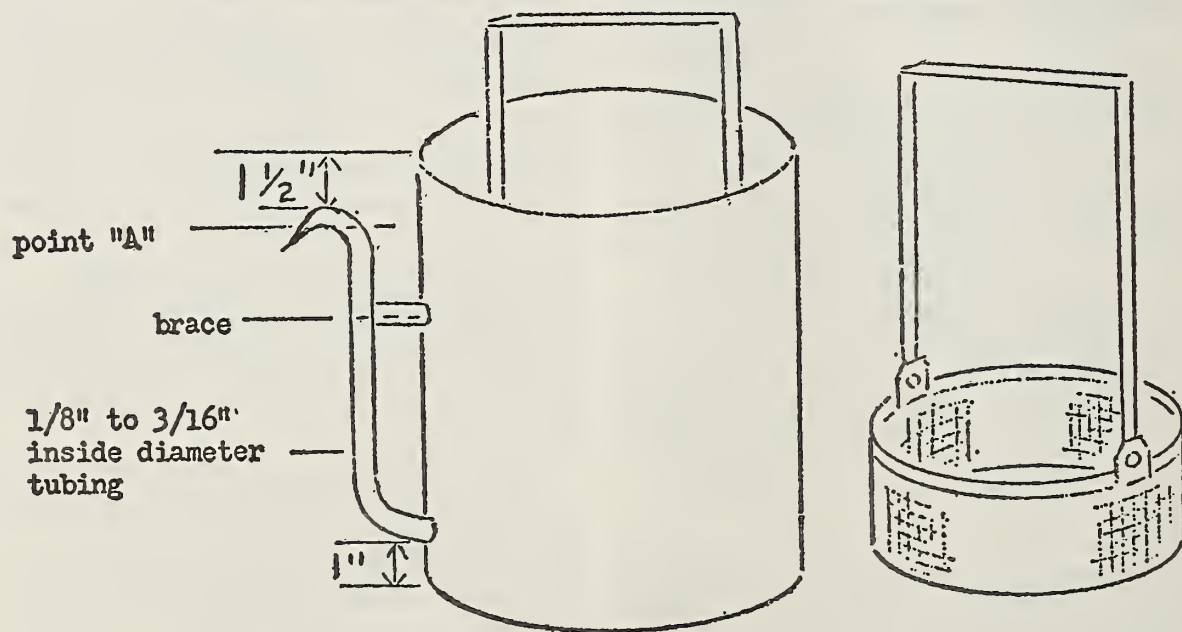
(b) *Drained weight/volume.* The percent weight/volume (w/v) of relish

$$\frac{\text{Drained weight avoirdupois ounces}}{\text{Declared U.S. fluid ounce contents of container}} \times 100 = \text{percent weight/volume of pickle ingredient}$$

shown in Table III, is determined as follows:

(1) The drained weight of pickle relish of all types is determined by emptying the contents of the container upon a U.S. Standard No. 8 circular sieve of proper diameter containing 8 meshes to the inch (0.0937 inch \pm 3 percent, square openings) so as to distribute the product evenly, inclining the sieve slightly to facilitate drainage, and allowing to drain for 2 minutes. The drained weight is the weight of the sieve and the pickles less the weight of the dry sieve. A sieve 8 inches in diameter is used for 1 quart and smaller size containers and a sieve with 12 inches in diameter is used for containers larger than 1 quart in size.

(2) Minimum quantity of pickle ingredient is designated as percent weight/volume which for the purpose of these standards is calculated as follows:



OVERFLOW CAN

LOT COMPLIANCE

§ 52.1700 Ascertaining the grade of a lot.

The grade of a lot of pickles covered by these standards is determined by the procedures set forth in the Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products (§§ 52.1 through 52.87).

EXPLANATION OF WEIGHTS AND MEASURES

§ 52.1701 Units of weights and measures.

(a) The following approximate equivalents are for reference only. They are not intended to replace more comprehensive works of authoritative technical standards or publications.

(b) Fluid (liquid) measures.

1 U.S. fluid ounce (fl. oz.) equals.	29.573 milliliters (ml.). 1.041 Imperial fluid ounces.
1 U.S. liquid gallon equals.	4 U.S. quarts. 128 U.S. fluid ounces. 3,785 milliliters (3.785 liters). 0.833 Imperial gallon.
1 liter equals.	1,000 milliliters. 33.814 U.S. fluid ounces. 1.057 U.S. liquid quart. 0.26417 U.S. gallon. 0.21998 Imperial gallon.
1 Imperial liquid gallon equals.	160 Imperial ounces. 4 Imperial quarts. 4,546 milliliters (4.546 liters). 1.201 U.S. gallon.

(c) Mass or weight.

1 avoirdupois ounce equal.	28.3495 grams. 0.028 kilograms.
1 avoirdupois pound equal.	16 avoirdupois ounces. 453.592 grams. 0.453,592 kilograms.
1 kilogram equals.	1000 grams. 35.274 avoirdupois ounces. 2.205 avoirdupois pounds.

(d) Length.

1 inch equals.	2.54 centimeters. 25.4 millimeters.
1 millimeter equals.	0.03937 inch.
1 centimeter equals.	0.3937 inch.

SCORE SHEET

§ 52.1702 Score sheet for pickles.

Size and kind of container	-----
Container code or marking	-----
Label	-----
Net weight (ounces)	-----
Vacuum (inches)	-----
Quantity pickle ingredient (v/v or w/v)	-----
Type of pack () cured; () fresh-pack	-----
Type of pickle (dill, sweet, sour, etc.)	-----
Style of pickle (whole, sliced, etc.)	-----
Density of sirup (degrees Baumé or degrees Brix)	-----
Acidity—grams per 100 grams or 100 ml.	-----
Salt (NaCl)—percent or degrees salometer	-----
Size, count (if whole)	-----
Ingredients (if mixed or chow chow):	-----
Cucumbers	-----
Onions	-----
Other	-----
Cauliflower	-----
Peppers	-----

Factors	Score points		
Color	20	(A) 18-20 (B) 16-17 (SStd.) 10-15	
Uniformity of size	20	(A) 18-20 (B) 16-17 (SStd.) 10-15	
Defects	30	(A) 27-30 (B) 24-26 (SStd.) 10-23	
Texture	30	(A) 27-30 (B) 24-26 (SStd.) 10-23	
Total score	100		
Flavor: () Good; () Reasonably good; () Off flavor			
Grade			

¹ Indicates limiting rule.

² Indicates partial limiting rule.

The U.S. Standards for Grades of Pickles (which is the third issue) contained in this subpart shall become effective on September 1, 1966, and thereupon will supersede the U.S. Standards for Grades of Cucumber Pickles which have been in effect since April 30, 1954.

Dated: July 22, 1966.

G. R. GRANGE,
Deputy Administrator,
Marketing Services.

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